

CLAIMS

1. The developing device which comprises charging means for charging a target material, wherein said target material as charged by said charging means is supplied onto an electrostatic latent image to develop said electrostatic latent image into a toner image, characterized in that:

said charging means comprises:

light irradiation means for irradiating light; and

photoelectron emission means, provided between said light irradiation means and said target material, for emitting photoelectrons when receiving light irradiated from said light irradiation means,

wherein a through-type aperture is formed through said photoelectron emission means from the side of said light irradiation means to the side of said target material; and

said through-type aperture is shaped to have its inner surface curved convexly to be widened outwardly to the side of said light irradiation means, and photoelectrons are emitted from the inner surface when receiving light from said light irradiation means.

2. The developing device as set forth in claim 1, wherein:

said inner surface of said through-type aperture is

curved convexly to have a cross section of an arc shape when cut along a line which is parallel to a through direction of said through-type aperture and which passes through a center of said through-type aperture.

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3. The developing device as set forth in claim 2, wherein:

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a radius of said arc of said cross-section is not shorter than a distance from one end of said through-type aperture to the other end of said through-type aperture.

4. The developing device as set forth in any one of claims 1 to 3, wherein:

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said through-type aperture is formed by electroforming.

5. The developing device as set forth in any one of claims 1 to 4, wherein:

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said photoelectron emission means is made of nickel or an alloy of nickel and cobalt.

6. The developing device as set forth in any one of claims 1 to 5, wherein:

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a photoelectric film, which emits photoelectrons when receiving light irradiated from said light irradiation means, is formed at least on one of the surfaces of said

photoelectron emission means, on the side facing said light irradiation means.

5 7. The developing device as set forth in claim 6,
wherein:

 said photoelectric film is made of noble metal, a compound of noble metals or a compound of noble metal and base metal.

10 8. The developing device as set forth in claim 7,
wherein:

 said noble metal is gold, silver or platinum, and the base metal is copper, palladium or nickel.

15 9. The image forming apparatus provided with said developing device of any one of claim 1 to claim 8.